28324 - Physical Geography for Land Management II: Climate and Water

Información del Plan Docente

Academic Year	2016/17
Academic center	103 - Facultad de Filosofía y Letras
Degree	419 - Degree in Geography and Land Management
ECTS	6.0
Course	3
Period	Second semester
Subject Type	Compulsory
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

The learning and teaching methodology developed in the course is aimed to promote the attainment of its objectives. A wide range of teaching and learning activities is implemented, such as interactive lessons, practical exercises, individual or group activities, directed activities, field work and private study.

A high level of student participation will be required from all students throughout the course.

Extensive material will be available *via* the Moodle site of the course. This offers a variety of resources including a

repository of the lecture notes used in class, a course syllabus as well as other forms of course-specific materials, including a discussion forum.

5.2.Learning activities

Lecture sessions 23 hours

Practical activities: Interactive, individual or group activities 10 hours

Directed activities 5 hours

Field work 20 hours

Private study 75 hours

Assessment 3 hours

5.3.Program

Primera Parte

Climate

- Climate data base
- Climate data series: quality control and analyses
  - Reference series
  - Suspicious data and inhomogeneities
  - Reconstruction
- Climate series analyses
  - Daily calendar
  - Trend analyses
  - Cold and heat waves

Second part

- Hydrological response and flow data
  - Hydrological processes at basin scale
  - Flood generation
  - Flow gauge and measuring systems
  - Flood and geomorphic flow calculation
- Floodplain management
  - Return period
  - Room for the River and the Assessment and Management of Flood Risks Directive (2007/60/EC)
  - Floodable area mapping
- Hydromorphological survey and ecological quality of rivers and streams
  - Channel hydromorphological survey
  - River dynamics and evolution
  - Ecological assessment methods for rivers and streams
  - Hydromorphological and ecological principles for river restoration.

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5.4.Planning and scheduling

For further details concernig the timetable, classroom and other information of the course please refer to the

"Facultad de Filosofía y Letras" web site (https://fyl.unizar.es/horario-de-clases#overlay-context=horario-de-clases)

More especification and annual calendar activities are presented to student during the first session

5.5.Bibliography and recomended resources

Applied Climatology

- Fernández, Felipe. Manual de climatología aplicada : clima, medio ambiente y planificación / Felipe Fernández García Madrid : Síntesis, D.L. 199
- Houghton, J.. Global warming: the complete briefing. Cambridge: Cambridge University Press 2010
- Martín Vide, Javier. El tiempo y el clima / Javier Martín Vide Barcelona : Rubes, 2003
- Strangeways, Ian. Measuring global temperatures: analysis and interpretation. Cambridge: Cambridge Univesity Press, 2010
- Strangeways, Ian. Precipitation. Cambridge: Cambridge Univesity Press, 2007.

Applied Hydrology

- Davie, T.. Fundamentals of hydrology. 2008 Abingdon: Routledge
- Malavoi. J.R.. Élements d'hydromorphologie fluviale / J.R. Malavoi et J.P. Bravard. Vincennes: ONEMA, 2010
- Martín Vide, Juan P.. Ingeniería de ríos / Juan P. Martín Vide . - 1ªed. Barcelona : Edicions UPC, 2002
- Ollero Ojeda, Alfredo. Guía metodológica de buenas prácticas en gestion de inundaciones . Contrato de Rio del Matarraña, Zaragoza, 2014
- Sear, D. A. ; Newson, M.D. ; Thorne, C.R.. Guidebook of applied fluvial geomorphology. - 2009 London: Thomas Telford Publishing